For discussion
on 27 February 2017

Legislative Council
Panel on Environmental Affairs

4394DS — Upgrading of Kwun Tong Preliminary Treatment Works
4413DS — Enhancement works for Kwun Tong Sewage Pumping Station

PURPOSE

This paper seeks Members' views on our proposal to –

(a) upgrade **4394DS – Upgrading of Kwun Tong Preliminary Treatment Works** to Category (Cat) A at an estimated cost of $349.9 million; and

(b) upgrade **4413DS – Enhancement works for Kwun Tong Sewage Pumping Station** to Cat A at an estimated cost of $1,054.4 million,

in money-of-the-day (MOD) prices.

PROJECT SCOPE

2. The proposed scope of works under **4394DS** - Upgrading of Kwun Tong Preliminary Treatment Works (KTPTW) and **4413DS** - Enhancement works for Kwun Tong Sewage Pumping Station (KTSPS) comprises the provision of –

(a) preliminary treatment facilities[1] to increase the treatment capacity of KTPTW from 330 000 to 440 000 cubic metres (m^3) per day (under **4394DS**);
(b) a sewage balancing facility[2] of capacity 16 000 m^3 at KTSPS (under **4413DS**);

[1] Preliminary treatment refers to screening and removal of solids and grit, and the preliminary treatment facilities to be provided include inlet screw pumping system, grit removal system, influent channels, emergency seawall bypass system, etc.

[2] A balancing facility is a regulating device to provide temporary storage of excessive preliminarily treated sewage and balance the sewage flow rate during extreme peak flow condition, i.e. during hours of highest flows of a day and/or heavy rains.

(c) a plant house with landscaped deck to enclose KTSPS (under **4413DS**);
(d) deodorisation facilities for both KTPTW and KTSPS (under **4394DS** and **4413DS)**; and
(e) other ancillary works[3] (under **4394DS** and **4413DS**).

The plan showing the locations of the proposed works for **4394DS** and **4413DS** is at **Enclosure 1**.

JUSTIFICATIONS

3. KTPTW and KTSPS are components of the Harbour Area Treatment Scheme (HATS) Stage 1 system. KTPTW provides preliminary treatment to the sewage generated from Kwun Tong and Wong Tai Sin, and KTSPS receives treated sewage from Chai Wan Preliminary Treatment Works (PTW) and Shau Kei Wan PTW. The preliminarily treated sewage from KTPTW and KTSPS is separately discharged into the HATS Stage 1 tunnel system for conveyance to the Stonecutters Island Sewage Treatment Works for chemically enhanced primary treatment and disinfection before final disposal to the western part of Victoria Harbour through a submarine outfall.

4. The design treatment capacity of the existing KTPTW is 330 000 m^3 per day. It is currently handling sewage generated from a residential population of 900 000 and a non-residential[4] population of 590 000, and operating at about 90% of its design capacity. Having regard to the proposed developments within the catchment, KTPTW is expected to reach its design capacity by 2021. We estimate that the ongoing and planned developments beyond 2021 in the catchment area of KTPTW, when fully occupied, will generate an additional sewage of around 100 000 m^3. The existing KTPTW will not be able to handle the additional sewage flow. We therefore propose to increase the treatment capacity of KTPTW from 330 000 m^3 per day to 440 000 m^3 per day to meet the development needs. Separately, with the increased capacity of KTPTW, the HATS Stage 1 tunnel system will no longer be able to cope with the extreme peak flow of the preliminarily treated sewage during hours of highest flow of a day and/or heavy rains. It is therefore necessary to construct an underground balancing facility with a temporary storage capacity of 16 000 m^3 at the KTSPS site to regulate the excessive preliminarily treated sewage from KTPTW during its extreme peak flow

[3] Ancillary works include the drainage works, boundary wall and landscaping works, etc., required to facilitate the modification of the existing influent channel and emergency seawall bypass system, as well as upgrading works of KTPTW and KTSPS.

[4] Non-residential population includes commercial, educational and industrial population.

periods. The temporarily stored preliminarily treated sewage would be pumped into the HATS Stage 1 tunnel system via KTPTW during off-peak hours.

5. To improve the environmental performance of the projects, we plan to construct a new plant house at KTSPS to fully enclose the existing pumping facilities and the proposed balancing facility with the provision of ventilation and odour control equipment to alleviate any potential odour impact. In addition, we propose to construct the roof top of the plant house as a landscaped deck with unhindered access to the public with a view to enhancing the visual appearance of KTSPS and creating a pleasure ground of about 10 000 square metres (m^2) for public enjoyment. The pleasure ground, to be managed by the Leisure and Cultural Services Department, will include seating, shades, children playing, elderly exercises and ancillary facilities.

6. We plan to submit the proposed works under **4394DS** and **4413DS** to the Public Works Subcommittee (PWSC) for consideration in May 2017 with a view to seeking funding approval of the Finance Committee (FC) in June 2017. Subject to the approval of the FC, we aim to commence construction of the proposed works in the second quarter of 2017 for completion in the fourth quarter of 2022[5].

FINANCIAL IMPLICATIONS

7. We estimate that the total capital cost of the proposed works under **4394DS** and **4413DS** as detailed in paragraph 2 above to be $1,404.3 million in MOD prices, comprising the following –

		$ million (MOD)
(a) **4394DS** –	Upgrading of KTPTW	349.9
(b) **4413DS** –	Enhancement works for KTSPS	1,054.4
	Total	**1,404.3**

[5] We plan to complete the construction of preliminary treatment facilities and balancing facility by the fourth quarter of 2021 for testing and commissioning and the construction of the landscaped deck by the fourth quarter of 2022.

8. We estimate that the proposed works will create about 165 jobs (130 for labourers and another 35 for professional or technical staff), providing a total employment of 9 300 man-months.

PUBLIC CONSULTATION

9. We consulted the Environment and Hygiene Committee of the Kwun Tong District Council for **4394DS** and **4413DS** on 16 July 2015 and 15 November 2016 respectively. The Committee supported the proposed works.

10. We also obtained the support of the Task Force on Kai Tak Harbourfront Development of the Harbourfront Commission on 18 November 2016.

ENVIRONMENTAL IMPLICATIONS

11. The proposed works under **4394DS** and **4413DS** require an environmental permit (EP) under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) for its construction and operation. Having regard to the project profile, the Director of Environmental Protection (DEP) is satisfied that the impact of the proposed works and the mitigation measures meet the requirements of the Technical Memorandum on Environmental Impact Assessment Process. The permission to apply directly for an EP was granted on 25 May 2016 with conditions, and the EP was granted on 22 June 2016 under the EIAO. We will implement the environmental mitigation measures and the environmental monitoring and audit (EM&A) programme in accordance with the relevant EP conditions. We have included a sum of $2.5 million and $9.1 million (in September 2016 prices) in the project estimates of the proposed works under **4394DS** and **4413DS** respectively for the implementation of the environmental mitigation measures and the EM&A programme.

.

12. For the construction phase, we will request the contractors to implement the recommended mitigation measures including the use of silenced construction equipment and noise barriers to reduce noise impact. In addition, water-spraying to the construction site will be applied regularly to minimise emission of fugitive dust, and on-site treatment of site run-off will be carried out to avoid potential water quality impact. For the operation phase, we will upgrade the deodorisation systems for KTPTW and provide new deodorisation systems for KTSPS accordingly to prevent potential odour nuisances.

13. For the proposed use of the landscaped deck of KTSPS for public enjoyment under **4413DS**, we have completed the Preliminary Environmental Review (PER) in December 2016. The PER has concluded and the DEP agreed that the proposed use would not have any long-term adverse environmental impact.

14. At the planning and design stages, we have considered ways to reduce the generation of construction waste where possible, including optimisation of the balancing facility design to minimise the extent of excavation and to avoid as far as practicable demolition of existing structure. In addition, we will request the contractors to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste at public fill reception facilities (PFRF)[6]. We will encourage the contractors to maximise the use of recyclable inert construction waste and non-timber formwork to further reduce the generation of construction waste.

15. We will also request the contractors to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will request the contractors to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste at PFRF and landfills respectively through a trip-ticket system.

16. We estimate that the proposed works will generate about 69 180 tonnes of construction waste. Of these, we will reuse about 14 000 tonnes (20%) on site, and deliver 54 100 tonnes (78%) of inert construction waste to PFRF for subsequent reuse and 1 080 tonnes (2%) non-inert construction waste to landfill sites for disposal. The total cost for accommodating construction waste at PFRF and landfill sites is estimated to be $4.1 million[7]. Detailed breakdown is as follows –

[6] PFRF are specified in Schedule 4 of Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in PFRF requires a licence issued by the Director of Civil Engineering and Development.

[7] The cost is calculated based on a new unit charge rate of $71 per tonne for disposal at PFRF and $200 per tonne at landfills, which will come into effect from 7 April 2017 as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation.

	Inert Construction & Demolition (C&D) Materials		Non-inert C&D Materials	Cost for accommodating construction waste at PFRF and landfill sites
PWP Item No.	**Reuse (tonnes)**	**Deliver to PFRF for subsequent reuse (tonnes)**	**Disposal at landfill (tonnes)**	**($ million)**
4394DS	6 000	14 000	300	1.1
4413DS	8 000	40 100	780	3.0
Total	14 000	54 100	1 080	4.1

HERITAGE IMPLICATIONS

17. The proposed works under **4394DS** and **4413DS** will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites and buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

18. Only government lands will be involved for implementation of the proposed works under **4394DS** and **4413DS**. No land resumption is required.

WAY FORWARD

19. We plan to seek funding approval from the FC for the proposed works under **4394DS** and **4413DS** in June 2017 after consulting the PWSC. Members are invited to comment on the proposed funding application.

Environment Bureau
Drainage Services Department
February 2017

榮業街 WING YIP STREET

WING YIP STREET 榮業街

WAI YIP STREET 偉業街

敬業街 KING YIP STREET

偉發道 WAI FAT ROAD

KWUN TONG BYPASS 高架道路 Elevated Road

翠屏河 TSUI PING RIVER

觀塘繞道

排水口 Outfall

渠 Nullah

海事處茶果嶺海上垃圾收集站
Marine Department
Cha Kwo Ling Marine
Refuse Collection Point

麗港公園 LAGUNA PARK

渡輪碼頭 FERRY PIER

茶果嶺村 CHA KWO LING TSUEN

偉業街 WAI YIP STREET

偉發道 WAI FAT ROAD

偉樂街 WAI LOK STREET

索引圖 KEY PLAN
比例 SCALE 1:10000

0 10 20 30 40 50 m 米
1 : 1 000 SCALE BAR 比 例 尺

圖例:
LEGEND:

- 工務工程計劃編號 4394DS的工程範圍 PROJECT BOUNDARY OF PWP ITEM NO. 4394DS
- 工務工程計劃編號 4413DS的工程範圍 PROJECT BOUNDARY OF PWP ITEM NO. 4413DS
- 現有觀塘基本污水處理廠 EXISTING KWUN TONG PRELIMINARY TREATMENT WORKS
- 現有觀塘污水泵房 EXISTING KWUN TONG SEWAGE PUMPING STATION

版 no.	日期 date	修改項目 description	簡簽 initial

圖則名稱 drawing title

工務工程計劃編號 4394DS & 4413DS
- 觀塘基本污水處理廠改善工程及觀塘污水泵房優化工程
PWP ITEM NOS. 4394DS & 4413DS
- UPGRADING OF KWUN TONG PRELIMINARY TREATMENT WORKS & ENHANCEMENT WORKS FOR KWUN TONG SEWAGE PUMPING STATION

繪畫 drawn	*SIGNED* K. S. LEUNG	日期 date 16 FEB 2017
核對 checked	*SIGNED* Ir T. Y. LAU	日期 date 16 FEB 2017
批核 approved	*SIGNED* Ir C. C. YEUNG	日期 date 16 FEB 2017
部門 office	顧問工程管理部 CONSULTANTS MANAGEMENT DIVISION	

圖則編號 drawing no. DCM/2016/073
比例 scale 1 : 1000

香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

v8i_PDF_cswp_Col-DPSP2016.pltcfg iWin7v8i_CSWP.tbl d:_dsd_pw\dms16784\DCM_2016_073.dgn A3 420x297